Youth and Tobacco Use

A Monograph on Perceptions, Practices & Policies

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About this monograph

This monograph is based on a large-scale study among youth in Bangalore, the metropolitan capital of Karnataka. It elaborates various aspects related to tobacco use among youth: consumption of tobacco; perceptions of tobacco use and tobacco users; individual, social and environmental correlates of tobacco use; and status of prevailing tobacco control measures. Apart from the study findings, the monograph reviews and summarises the current literature and provides a nation-wide glimpse of these issues. It concludes by providing some pertinent suggestions on reducing tobacco use among youth.

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Abbreviations

CBFC	Central Board for Film Certification
CDC	Centres for Disease Control and Prevention
CI	Confidence Interval
COTPA	Cigarette and Other Tobacco Products (Prohibition of advertisement and regulation of trade and commerce, production, supply and distribution) Act, 2003
FGD	Focus Group Discussions
GSPS	Global School Personnel Survey
GYTS	Global Youth Tobacco Survey
IPH	Institute of Public Health
ISEC	Institute for Social and Economic Change
NAS	National Accounts Statistics
NFHS	National Family Health Survey
NHSDAA	National Household Survey of Drug and Alcohol Abuse
NSS	National Sample Survey
NTCP	National Tobacco Control Programme
PFCE	Private Final Consumption Expenditure
PUC	Pre-university College
PUE	Pre-university Education
RR	Risk Ratio
SD	Standard Deviation
TV	Television
WHO	World Health Organisation

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Chapter One

Introduction

This chapter provides a brief background of current scenario and issues regarding tobacco use and tobacco control, particularly in relation to the youth in India, and presents the rationale for this monograph.

BACKGROUND AND RATIONALE

Tobacco Use and the Resultant Burden

India is the second largest consumer of tobacco in the world after China. According to the data from the National Household Survey of Drug and Alcohol Abuse (NHSDAA) conducted in 25 Indian states in the year 2005, 55.8% of men were using tobacco and the prevalence of tobacco use was shown to increase with age.[1] Findings of the 52nd round of the National Sample Survey (NSS) put the estimate of tobacco use prevalence among those aged 15 years and above at 51.3% among men and 10.3% among women.[2] The third round of the National Family Health Survey (NFHS) conducted in 2006–2007 estimated tobacco use prevalence of 57% among men and 11% among women.[3]

Prevalence of tobacco use among children and young people in India is also alarming. The Global Youth Tobacco Survey (GYTS) that periodically assesses the nationally representative sample of young students aged 13-15 years reported, in its 2006 round, that 14% of students (17.2% boys, 9.5% girls) were current users (use of tobacco within 30 days preceding the survey) of tobacco products.[4] According to the GYTS conducted from 2003 to 2006, prevalence of ever cigarette smoking increased from 9.5% to 12%.[5] This difference was statistically significant for central, north-eastern and southern India.[6] This increase was maximum in southern India where ever cigarette smoking prevalence increased from 7% (GYTS 2003) to 21.1% (GYTS 2006).[7] Prevalence of current tobacco use did not change significantly from GYTS 2003 (16.9%) to GYTS 2006 (14.1%).[5]

Tobacco use exerts a huge disease and economic burden in India. Jha et al.[8] estimated that in the year 2010, smoking would have caused a total of around 930,000 adult deaths in India. Nearly 70% of these deaths would have happened in the age group of 30–69 years.[9] In the year 2002–2003, the cost of the tobacco-attributable burden of just three groups of diseases, cancer, heart diseases and lung diseases, was estimated to be ₹308.3 billion.[10] According to the National Account Statistics (NAS) in the year

2006–2007, the private final consumption expenditure on tobacco in India amounted to ₹572.5 billion, more than 40% of the private consumption expenditure made on medical care and health services in the same year and more than 87% of the total (revenue and capital) expenditure of central and state governments on medical, public health, water supply and sanitation in the year 2008–2009 (i.e. ₹653.1 billion).[11,12] Hence, there is a huge economic burden on individuals, their families and health systems.

Youth and Tobacco Use: Some Issues

The available data on understanding the knowledge, attitude and practices of pre-university students (11th and 12th grades) in India are very limited. We could find only two studies in different settings that explored some aspects of tobacco use in this age group.[13,14] It seems that this particular age group (11th and 12th grades) that provides a link between school and university life has not been adequately studied. As tobacco use among university students has been estimated to be quite high[15] compared to school students,[4] study of pre-university students could bridge a knowledge gap and help to better understand what happens in terms of tobacco use and attitudes on the age continuum for youth.

Educational institutions provide important settings for tobacco control interventions. Though there have been a few school-based tobacco control interventions by voluntary organisations in India, tobacco-related issues are conspicuous by their absence in the curriculum.[16,17] Findings from the Global School Personnel Survey (GSPS) in India revealed that only 16.3% of school personnel surveyed had received some training on tobacco use prevention among youth.[18]

Behavioural research on attitudes and beliefs regarding tobacco-related issues among youth would be very helpful to understand and subsequently design appropriate strategies and contents for education and behavioural change communication aimed at reducing tobacco use among youth. Furthermore, Government of India launched the National Tobacco Control Programme (NTCP) in 2006.[19] One of the main strategies of this programme is to establish district-level anti-tobacco cells, which in turn will carry out school-based activities along with other tasks to raise awareness about tobacco-related issues among children and youth. In this context, there is a need to generate more evidence regarding factors that influence tobacco use practices of students.

Tobacco Control Policies with Relevance to Youth

Governments in India have played an active role in bringing regulatory measures to curb tobacco use. In 2001, Government of Karnataka enacted the Karnataka Prohibition of Smoking and Protection of Health of Non-Smoker Act. Subsequently, Government of India enacted the Cigarettes and Other Tobacco Products (prohibition of advertisement and regulation of trade and commerce, production, supply and distribution) Act, 2003 (COTPA). These legislations have many provisions that are relevant to youth and educational institutions such as:

- Prohibition of smoking at public places (including educational institutions).
- Prohibition of sale of tobacco products to minors (<18 years of age).

- Prohibition of sale of tobacco products within 100 yards of any educational institutions.
- Prohibition of advertising of tobacco products in print and electronic media, etc.

However, there have been very few regional studies assessing the status of implementation of these rules. Also, of late, the notifications and implementations of some of these provisions (e.g. prohibition of smoking in public places, prohibition of on-screen smoking, etc.) have led to heated debates and reactions from various stakeholders such as tobacco industry, tobacco growers, governments, media and civil society organisations.[20] Our study attempts to capture youth's opinions on these issues and gauze the status of implementation of some of these rules.

AIM AND OBJECTIVES

The overall aim of the study that formed the basis of this monograph was to understand perceptions and practices of pre-university students on tobacco use in Bangalore city and to assess the enforcement of selected provisions of the COTPA 2003 that are relevant to youth. Specific objectives were as follows:

- To understand the extent and patterns of various forms of tobacco use among pre-university students across factors such as gender, type of the school attended and exposure to tobacco advertising and promotion.
- To understand students' perceptions of tobacco use and tobacco users including harms/benefits of tobacco use and factors influencing use/non-use of tobacco products.
- To understand tobacco control policies/initiatives by pre-university colleges and enforcement of selected provisions of COTPA 2003, which are specifically relevant to youth.

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Chapter Two

Methods

This chapter elaborates on methods used for the study described in this monograph including study design, sampling, data collection and analysis techniques. It also describes ethical considerations made during planning and conduct of the study. Finally, it provides some broad features of the sample population.

STUDY DESIGN AND SAMPLING

A cross-sectional research design using mix of quantitative and qualitative data collection tools was used. Use of self-administered anonymous survey has been a common practice shown to be reliable in assessing tobacco use practices among the youth in India and other countries.[1,2] Apart from the survey, this study used Focus Group Discussions (FGDs) with students to understand qualitative aspects of some of the reported perceptions/practices. In addition, study used photo documentation of tobacco selling points within 100 yards of the sampled Pre-university Colleges (PUCs). Students enrolled in PUCs offering education in English and/or *Kannada* language and located within geographical limits of Bangalore Urban (North) and Bangalore Urban (South) districts (as defined by the Department of Pre-university Education, Government of Karnataka) formed the study universe.

For the survey, a stratified random sampling technique was used. All the PUCs in Karnataka come under the purview of the state department of Pre-university Education (PUE). According to the department statistics for the year 2005–2006, there were 409 PUCs in Bangalore city.[3] PUE department classifies PUCs into four types: Government and Corporation PUCs, Aided PUCs, Unaided PUCs and First grade PUCs/Bifurcated PUCs. This classification is mainly based on the source of funding and management of these institutions. As the names suggest, Government and Corporation PUCs are funded and managed by Karnataka state government and Bangalore Municipal Corporation (local government) authorities, respectively. Aided PUCs are managed by private (non-government) management body but are funded by state government. Unaided PUCs are managed and funded by private bodies. Bifurcated/First grade PUCs are the PUCs that were separated from degree colleges (and hence the name 'Bifurcated') and are now run as PUCs and share their campuses with degree colleges. These bifurcated PUCs are funded by the state government and in most cases managed by private bodies.

Sampling was done to capture the differences in socio-economic background of students and the culture of school environment as the available literature documents differences in practices and perceptions of tobacco use among government and private schools/colleges students in the Indian context.[4–7] Different types of PUCs often reflect the difference in the socio-economic status of the students and a difference in the school culture and environment.

Hence, the sample for this study was derived from four strata: Government PUCs, Aided PUCs, Unaided PUCs and Bifurcated PUCs. Unaided PUCs formed significant proportion of all the PUCs in the selected districts followed by Aided PUCs, Bifurcated PUCs and Government PUCs. In order to have a sample population representative of all the pre-university students in Bangalore city, students were recruited based on probability proportional to PUC type; majority of students from Unaided PUCs followed by Aided PUCs, Bifurcated PUCs and Government PUCs in descending order. Sampling was done in two stages. In the first stage, PUCs were randomly selected from all these four categories based on the probability proportional to distribution of PUC types in Bangalore city, i.e. more of Aided colleges were selected and least of Government PUCs were selected. In the second stage, from each selected PUC, one class was (11th or 12th grade) selected on a random basis. All the students present on the day of the survey in the selected classes were eligible to participate in the survey.

Considering the probable ever tobacco use prevalence of 16% (Bhojani et al.[8] estimated an ever tobacco use prevalence of 15.6% among pre-university students in Bangalore city), the sample size needed for this study was calculated to be 575 students ($n = 1.96^2 \times 0.16 \times 0.84/0.03^2$). As I used the randomisation at the level of the PUCs and the classes but not at the level of individual students, I added further 50% of the needed sample size to compensate for the design defects. Hence, I targeted for the sample population of around (575 + 288) 863 students. Assuming the average enrolment size of 50 students per class (as such data were not available from the PUE department), we aimed to cover 19 PUCs. However, I achieved a total sample size of 1,087 students.

Apart from the survey, six FGDs were planned: three among boys and three among girls with each group having six to eight students. Selection of PUCs for FGDs was made later in the course of the study after commencement of the survey. Selection of PUCs for FGDs was purposive in order to get different perspectives and to capture students from different contexts and socio-economic backgrounds. During the survey period, researchers frequently had informal discussions with students usually following the completion of the survey at respective PUCs. These interactions helped researchers to identify students who were vocal and had different perspectives and hence provided guidance in selection of PUCs for FGDs. We had students from Evening PUC (most students studying in Evening PUCs work during day time), Regular daytime PUC, Aided PUC (where students usually pay less fees as these are government-aided PUCs managed by private managers) and Unaided PUC (which are completely autonomous and privately managed). Students groups also reflected different socio-economic strata.

All the sampled PUCs were considered for the presence of tobacco selling points within 100 yards of their campuses. When such tobacco selling points were spotted, they were photo documented.

DATA COLLECTION AND ANALYSIS

An anonymous self-administered questionnaire with mostly close-ended questions and a few open-ended questions was used to collect data. The questionnaire was adapted from the Global Youth Tobacco Survey (GYTS) India core questionnaire, which is a validated questionnaire used to collect data on similar variables in nation-wide periodic surveys.[9] The questionnaire was further refined through a peer review process by the staff at the Institute of Public Health (IPH) and the Institute for Social and Economic Change (ISEC). It was then translated into *Kannada* (regional language) and back translated to English to assure accuracy. The questionnaire was field tested at one of the PUCs and was finalised on the basis of feedback from students. After explaining the purpose of the survey and about the voluntary and anonymous nature of participation in the survey, researchers distributed questionnaires to those students who agreed to participate in the survey. Researchers remained present throughout the survey to help students with any doubt/query.

Data collected through survey were entered using EpiData (version 3) to avoid manual errors and invalid entries (by setting legal values for each variable beforehand).[10] One of every 10 filled questionnaires was verified for accuracy of data entry. After appropriate data cleaning, quantitative data from survey were analysed using EpiInfo (version 3.5.1).[11] Univariate and bivariate analyses were performed to analyse individual variable and to explore correlates of tobacco use among youth.

FGDs were conducted separately with boys and girls. Guidelines were developed to facilitate FGDs. FGDs covered themes such as perceptions regarding extent and forms of tobacco consumption, reasons for use/non-use of tobacco, perceived benefits/harms of tobacco use, common/popular tobacco products and suggestions to reduce tobacco use among youth. The principal researcher facilitated FGDs with boys while a female research associate facilitated FGDs with girls. It was found that boys felt comfortable to openly discuss issues in the presence of a male researcher. FGDs on an average lasted for 45–60 minutes. With consent from the students, FGDs were recorded on MP3 recorder along with a detailed note taken by researchers and were immediately transcribed and typed following the discussions. Qualitative data generated through open-ended questions in the questionnaire and through FGDs were inductively coded and analysed to identify overarching themes.

One of the provisions under the Cigarettes and Other Tobacco Products Act, 2003 (COTPA) prohibits selling of any tobacco products within 100 yards (approximately 300 feet) of any educational institutions.[12] We planned to photo document any violations of this provision in context of the sampled PUCs. Tobacco selling points were confirmed either through direct observation of tobacco products at the site of sale and/or by asking for the availability of tobacco products by researchers at the point of sale. Interactions with students were helpful in locating such potential tobacco selling points around PUCs. Once located, such tobacco selling points were photo documented.

ETHICAL CONSIDERATIONS

Following measures were considered during the conduct of the study to assure that study meets expected ethical standards.

- A research protocol along with copies of questionnaire and FGD guidelines was shared with officers from the PUE Department. A written permission, in form of an official circular, was received from the Commissioner, PUE Department, allowing researchers to visit PUCs and requesting cooperation from PUC authorities.
- Authorities of sampled PUCs were explained in detail the purpose and the voluntary nature of participation in the study. Identities of the participating PUCs in the survey and FGDs were kept confidential. After detailed explanation of the study protocol, written consents were sought from the head of the participating PUCs. Only after a due informed written consent, PUCs were enrolled in the study.
- Sampled students were provided explanation regarding the objectives of the survey/FGD and the voluntary nature of participation. The questionnaire was anonymous and self-administered. Only after an informed verbal consent, students were enrolled in the survey. FGDs were also anonymous and were conducted at a location in the PUC building suggested/preferred by participating students and in absence of teachers and other school personnel. Data hence collected were kept confidential and safe only with the research team and were used only for the research purpose.
- Brief educational session providing information on harms of tobacco use and available support services to quit tobacco use was delivered to the participating students by researchers following the completion of the survey.
- Study results in form of the collated data (with no reference to participating PUCs or students) were shared with the PUE Department and the participating PUCs.

SAMPLE CHARACTERISTICS

Plotting of the sampled PUCs (n = 19) on the Bangalore city map revealed that the randomization achieved a fair geographic distribution across the Bangalore city. Figure 2.1 depicts the location of sampled PUCs on the map of Bangalore city. The distribution of PUC types in the sampled population also reflected the distribution in actual population.

All the students present on the day of the survey participated in it (n = 1,087). There were no refusals from sampled schools or from students of sampled classes to participate in the survey. However, accounting for those students who remained absent on the day of the survey, the response rate for the survey was 82.5%.

Table 2.1 provides some of the characteristics of the sample population (Item non-response ranged from 0.5% to 2.5%). Sample population included 57.5% boys and 42% girls. Government PUC stratum included only boys (n = 78), while girls dominated Bifurcated PUC stratum (79.7% vs 20.3%). Sample population had a mean age of 16.9 years (SD = 1.9). Sample had 53% students from 11th grade and 47% students from 12th grade.

Students studying commerce stream (58%) dominated the sample population followed by students from science (31%) and arts/humanities (11%). Use of random sampling resulted in a fair geographic distribution but there was oversampling from the commerce stream. Apart from randomization, one of the reasons for more students getting sampled from commerce stream could be the fact that the number of admissions for pre-university studies is highest in commerce stream followed by

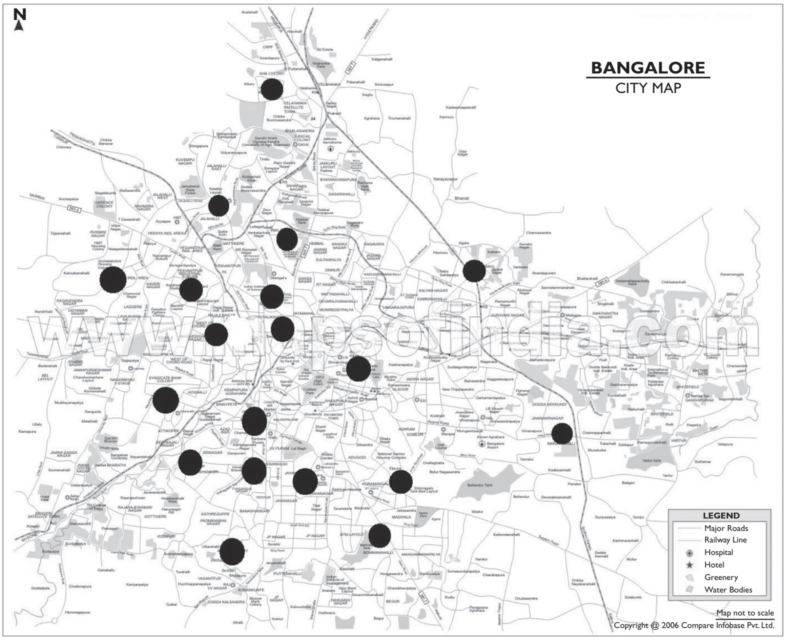

Figure 2.1 Geographic distributions of sampled PUCs.
(Source: Bangalore city map taken from www.mapsofindia.com Copyright@2006 Compare Infobase Pvt. Ltd.)

Table 2.1 Characteristics of the sample population.

Variables		Types of PUCs				
		Government (n = 78)	Bifurcated (n = 133)	Aided (n = 345)	Unaided (n = 531)	Total (n = 1,087)
Gender n (%)	Male	78 (100.0)	27 (20.3)	228 (66.1)	292 (55.1)	625 (57.5)
	Female	0 (0)	106 (79.7)	115 (33.3)	236 (44.4)	457 (42)
Age	Mean (SD)	16.8 (0.8)	15.9 (0.7)	17.5 (2.9)	16.8 (1.0)	16.9 (1.9)
	Median	17	16	17	17	17
Study medium n (%)	Kannada	57 (73.1)	13 (9.8)	77 (22.3)	14 (2.6)	161 (14.8)
	English	21 (26.9)	117 (88.0)	264 (76.5)	516 (97.2)	918 (84.5)
Study stream n (%)	Science	21 (27.0)	45 (33.8)	69 (20.0)	189 (35.6)	324 (29.8)
	Arts	47 (60.3)	1 (0.8)	48 (13.9)	16 (3.0)	112 (10.3)
	Commerce	9 (11.5)	85 (63.9)	221 (64.1)	309 (58.2)	624 (57.4)

science and arts stream. Sample population had more students studying in English medium (84.5%) compared to students studying in *kannada* medium classes (14.5%). However, Government PUC stratum was an exception with more students studying *kannada* medium compared to English medium classes (73.1% vs 26.9%).

The sample had 57% of students who belonged to ‘Others’ (general) category, followed by students from ‘Scheduled Castes’ (20%), ‘Other Backward Castes’ (6%) and ‘Scheduled Tribes’ (3%). For the rest 14% students, cast categories were either not applicable or they were unaware of which caste category they belonged to.

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Chapter Three

Youth and tobacco use

This chapter describes the extent, patterns and forms of consumption of tobacco among youth in Bangalore city and discusses these findings in the context of youth and tobacco use in India. Also, the chapter provides a brief description on tobacco consumption expenditure made by youth.

TOBACCO CONSUMPTION

Defining Tobacco Use

There has been some data on tobacco use among the youth in India generated through a few large-scale surveys and a number of small-scale research studies. Use of tobacco has been assessed using varied measures such as prevalence of 'ever users', 'current users', 'experienced users', 'occasional users' and 'daily users' considering time and frequency of tobacco use by young people. Also, the definitions of these various categories may differ from study to study.

The World Health Organisation (WHO), in its attempt to standardise methodology for drug use surveys among students, defined 'ever use' as use of a drug in question in the lifetime.[1] Pal and Tsering[2] in their systematic review of published research studies assessing tobacco use among students from the year 1991 to 2007 found that majority of the studies reviewed provided data on 'ever use' as use of tobacco in lifetime. On the similar grounds, 'never users' have been defined as those who never use tobacco in their lifetime. The usual approach towards defining the 'current use' has been the use of tobacco within 30 days preceding the survey.[3–7] A category of 'past users' has been used by some studies to define those who used tobacco in their lifetime except within 30 days preceding the survey.[3] Other researchers also used measures such as 'experimented users', who used tobacco products for five or fewer times in their lifetime, and 'occasional users', who were using tobacco but not on a daily basis.[8]

Also, tobacco is used in myriad ways in India. One easy and most common approach to classify these various forms is to divide them into 'smoking' and 'smokeless' forms. *Bidis* and cigarettes are the most common forms of smoking tobacco in India but there are many other ways that tobacco is consumed in smoking forms, e.g. *hooka* and *cheroot*. Smokeless forms include chewable tobacco, such as *gutka, khaini* and *pan* with tobacco, and direct application of tobacco, e.g. snuff and tooth powder containing tobacco. A report on tobacco control in India edited by Reddy and Gupta[9] provides detailed documentation of various forms in which tobacco is used in India.

For purpose of this study, to follow standardised definitions and to enable comparison across studies, following measures have been used to describe tobacco use.

- 'Ever tobacco use' as the use of any tobacco products even once in a lifetime.
- 'Current tobacco use' has been provided with two reference categories: (1) use of any tobacco products within 30 days and (2) within seven days preceding the survey. Except when specified, use of the term 'current tobacco use/user' in context of our study refers to the use of any tobacco products in seven days preceding the survey.
- 'Never tobacco use' as no use of any tobacco products in lifetime.
- 'On-screen tobacco use' as the use of tobacco products by actors on television or in films.

Prevalence of Tobacco Use

In general, 15.1% of pre-university students at least once or more during their lifetime used tobacco. Most of the ever tobacco users (76.3%), both in case of boys and girls, tried with smoking tobacco when they first tried tobacco use. This was followed by chewing tobacco (19.7%) and tobacco application (3.9%). Interestingly, more of the boys compared to girls tried with smoking (80.6% vs 57.1%) while more of the girls compared to boys tried with chewing tobacco (35.7% vs 16.1%) and tobacco application (7.1% vs 3.2%).

However, during FGDs, students' perceptions on extent of tobacco use by pre-university students were much more than found from self-reported questionnaire. During FGDs, students reported that on an average, 50–60% of boys and 20–40% of girls use tobacco in PUCs. These perceptions raise questions of whether these were just the heightened perceptions or whether self-reported tobacco use through questionnaire was an underestimation of actual extent of tobacco use among pre-university students.

Table 3.1 provides details on extent and forms of tobacco use among pre-university students. Of the 7.5% of students who used tobacco within seven days preceding the survey, male students far outnumbered female students. Smoking was the most common form followed by chewing tobacco and tobacco application among current tobacco users. Again, there were more male students smoking compared to female students while there were more female students using chewing tobacco and tobacco application compared to male students. A significant number of current users used more than one forms of tobacco. All the three forms of tobacco were in use by 13.4% of current users. Almost all the current users who were using chewing tobacco were also smoking.

During FGDs, perceptions of students regarding forms of tobacco use also matched with findings from the survey, with smoking being the most common form of tobacco use. Explaining the reasons for smoking being the most common form of tobacco use, students reported that most of the people that students see around use smoking tobacco and the students usually learn from their friends or people around them and hence they also start with smoking. Survey revealed that most of the current smokers (79.5%) were using cigarettes. During FGDs, some students explained that cigarettes are more 'effective' compared to smokeless tobacco and hence are used more:

Table 3.1 Extent and forms of tobacco use.

Tobacco use (%)	Boys (n = 625)	Girls (n = 457)	Average (n = 1,087)
Ever users	21.7	5.3	15.1
Current users			
Use of tobacco within last 30 days	11.2	1.5	7.2
Use of tobacco within last seven days	11.7	2.0	7.5
Forms of tobacco use among current users (use of tobacco within last seven days)* (%)	**Boys (n = 73)**	**Girls (n = 9)**	**Average (n = 82)**
Smoking tobacco	91.8	66.7	89
Chewing tobacco	31.5	33.3	31.7
Tobacco application	27.4	33.3	28.0
Smoking as well as chewing tobacco	27.4	22.2	26.8 (%)
Smoking as well as tobacco application	21.9	11.1	20.7
Chewing as well as tobacco application	16.4	11.1	15.8
Smoking, chewing and tobacco application	13.7	11.1	13.4

* Total percentage may exceed that of 100% because of multiple responses.

Smoking is more common compared to the use of chewing tobacco because cigarette has more nicotine and many chemical substances (around 4000)… .

Students felt that *bidis* are not so stylish and are used mainly by old people:

Cigarettes are more stylish compared to bidis. Only workers and old people use bidis… .

Among smokeless tobacco products, *gutka* appeared to be the most popular product. *Bida or pan* with tobacco and *khaini* were other common products mentioned.

Median age at the initiation of tobacco use was 15 years (SD = 3.2) and 47% of current tobacco users had started tobacco use in the last one year.

Global Youth Tobacco Survey (GYTS) conducted in India, as part of the global tobacco surveillance system developed by the Centres for Disease Control and Prevention (CDC) and WHO, provides nationally representative estimates of tobacco use and related factors among students from 8th to 10th grades in an age group of 13–15 years. Two rounds of GYTS (2003 and 2006) have been conducted till now. According to GYTS, prevalence of ever cigarette smoking increased from 9.5% to 12% from GYTS 2003 to 2006.[10] This difference was statistically significant for central, northeastern and southern India.[11] This increase was maximum in southern India where ever cigarette smoking prevalence increased from 7% (GYTS 2003) to 21.1% (GYTS 2006).[12] Prevalence of current tobacco use did not change significantly from GYTS 2003 (16.9%) to GYTS 2006 (14.1%).[10]

Periodic national surveys by the National Sample Survey Organisation (NSSO) and National Family Health Survey (NFHS) estimate tobacco use but among people aged 15 years and above. The National Household Survey of Drug and Alcohol Abuse (NHSDAA), carried out in 2004, estimated tobacco use among people of 12–60 years of age. NHSDAA estimated tobacco use prevalence among age group of 12–18 years at 21.7%.[13]

Apart from the large nationally representative studies, there have been many small-scale studies providing estimates of tobacco use among young people at city, area or regional level. A systematic review of all the studies published in indexed literature between 1991 and 2007 (total 15 epidemiologic studies) that examined tobacco use among students ranging from 6th to 12th grades by Pal and Tsering[2] revealed that median prevalence of ever tobacco use was 18.2%, which was lesser compared to GYTS estimates (students from 8th to 10th grades). All these studies reveal that, in general, tobacco use among young students in India is quite high with the prevalence being significantly higher among boys compared to girls. Also, there are enormous regional variations with ever tobacco use prevalence being from 4% in Himachal Pradesh to 75.3% in Mizoram as revealed by GYTS.[9] Similarly, studies have shown large differences in prevalence of current tobacco use among students across Indian metropolises from 4% in Mumbai[14] to 41.1% in Chennai.[5]

Our study explores a relatively older age group of students from 11th and 12th grades. Most of the studies assessing tobacco use among young population in India including GYTS have been carried out among students of 8th–10th grades[2] with a few recent studies exploring tobacco use among relatively younger age groups.[6,15–17] In recent literature, only three studies, two from north Indian cities (New Delhi, Jaipur) and one from south Indian city (Bangalore), included students beyond 10th grade.[3,7,18] Study by Singh et al.[7] in New Delhi that used a wider age group of 10–18 years reported ever use prevalence of 9.8% and current use prevalence (use in last 30 days) of 5.4% among students in Delhi but without providing age-specific prevalence data. Singh and Gupta[18] reported that nearly 2% of students of age 13–18 years in Jaipur were currently using tobacco (definition of current use not specified) with no significant age-wise difference in tobacco use prevalence. A recent study among boys of 11th and 12th grades from one of the PUC in Bangalore city revealed ever tobacco use prevalence of 15.7% and current use prevalence (use in last 30 days) of 5.3%.[3]

Tobacco use estimates in my study (both ever and current use prevalence) are higher than the above-mentioned previous studies in Delhi and Jaipur. Also, if i compare my findings with the recent study done in same age group but only including male students in Bangalore city, the estimates of both ever tobacco use prevalence (21.7% vs 15.7%) and current tobacco use prevalence (use in last 30 days, 11.2% vs 5.3%) among male students are much higher in my study compared to the previous study. This differences can be because of the very limited sample size (n = 300) selected from only one private PUC used by the previous study.[3]

Comparing our findings with those from GYTS Karnataka (2003), current tobacco use prevalence found in my study was higher than that reported by Karnataka Rural GYTS[19] and lower than that reported by Karnataka Hassan GYTS.[20] However, my findings on current tobacco use prevalence (7.2%) were comparable with the findings from the recent Karnataka GYTS[21] for metropolis (Bangalore and Mysore) students, i.e. 8.3%. Except GYTS Ahmadabad[22] and GYTS Karnataka,[21] which reported higher prevalence of smokeless tobacco compared to other tobacco forms, my findings of higher prevalence of smoking tobacco matched with other studies from Bangalore,[3] Jaipur,[18] Chennai[5] and Delhi.[23]

In general, it is evident that tobacco use among young population in India is variable across the regions. Though now there are data available through GYTS and many other small-scale studies from different places within the country providing estimates of tobacco use from selected states, cities and regions, more work is needed to have comprehensive mapping of tobacco use among broader age groups and to explain geographical and age-specific differences in tobacco use among young people in India. In this context, our study first time provides reliable data on tobacco use among pre-university students in Karnataka and adds to a very limited body of knowledge on tobacco use among this particular age group in India.

SPENDING ON TOBACCO CONSUMPTION

This section provides some details on consumption expenditure as reported by students, who used tobacco within seven days preceding the survey on various forms of tobacco use (Item non-response: 8.5%). Expenditure data were collected for consumption of cigarettes, *bidis* and chewing tobacco (*gutka* and other chewable forms), being the commonly reported forms of tobacco use among youth.

There was a huge variation in personal consumption expenditure incurred by students due to variations in quantity of tobacco consumption. This is evident from skewed distribution of data on weekly consumption expenditure on tobacco as presented in Table 3.2. Total consumption expenditure per week in absolute terms by all the current users (n = 82), who used tobacco within seven days preceding the survey, was ₹10,385. Weekly expenditure by current users on smoking tobacco was ₹9,213, on chewing tobacco was ₹727 and on applied tobacco was ₹445 by current users in sample population.

In India, the second largest consumer of tobacco in the world, private consumption expenditure on tobacco products in domestic markets makes a significant portion of private final consumption expenditure (PFCE). In fact, from the year 1950–1951 to 1970–1971, PFCE on tobacco exceeded that on medical care and health services.[24] Subsequently, PFCE on tobacco products became smaller in terms of proportion of total PFCE. It also became smaller in comparison to PFCE made on health care, which in turn has grown over the period.[25]

According to the National Account Statistics, in the year 2006–2007, the private consumption expenditure on tobacco in India amounted to ₹572.5 billion, more than 40% of the private consumption expenditure made on medical care and health services

Table 3.2 Personal consumption expenditure on tobacco products.

Tobacco product	Weekly personal consumption expenditure on tobacco products (₹) Median	 Mean (Standard deviation)
Cigarettes	50	141.7 (218.6)
Bidis	50	55.9 (72.1)
Chewing tobacco products	10	29.7 (44.9)

in the same year and more than 87% of the total (revenue and capital) expenditure of central and state governments on medical, public health, water supply and sanitation in the year 2008–2009 (i.e. ₹653.1 billion).[26,27] Given the fact that tobacco consumption is higher among people from lower economic class, private consumption expenditure of such an extent on tobacco products that leads to further economic burden in terms of health care costs for illnesses caused by tobacco consumption is significant.

To our knowledge, there has been no published data on consumption expenditure on tobacco use among young people. If the findings from our study are extrapolated to all the pre-university students in Karnataka, considering the total enrolment of 901,111 in the year 2006–2007,[28] and assuming the same level of expenditure found in the sample population, a total expenditure on tobacco products by only pre-university students in Karnataka would be more than ₹41.3 crore (or ₹413 million).

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Chapter Four

Perceptions about tobacco use

This chapter provides students' perceptions about harms as well as benefits of tobacco use. It further provides students' perceptions about man and woman smokers and students' attitude for future practices regarding tobacco use.

BENEFITS AND HARMS OF TOBACCO USE

As shown in Table 4.1, majority of students (79.7% in regard to smoking tobacco, 75% in regard to chewing tobacco and 73.1% in regard to tobacco application) were aware of the harmful effects of tobacco use on health. However, a few students felt that tobacco use is probably (2.7%) or definitely (5.6%) not harmful to health. The fact that exposure to second-hand smoke (passive smoking) is also harmful to health was reported by relatively lesser proportion of students (68.2%) compared to those who perceived active tobacco use as harmful. Nearly 6.6% of students felt that passive smoking is definitely not a health hazard. Interestingly, girls appeared to be more aware of harmful effects of all these forms of tobacco use on health compared to boys.

Table 4.1 Knowledge regarding harmful effects of tobacco use on health.

	Definitely not	Probably not	Definitely yes	Probably yes	Don't know
Is smoking harmful to health? (%)					
Boys	6.5	3.9	74.3	8.8	6.5
Girls	5.3	1.5	85.2	3.8	4.2
Is chewing tobacco harmful to health? (%)					
Boys	5.5	2.9	72.2	7.8	11.5
Girls	5.5	2.4	77.9	8.2	6.0
Is tobacco application harmful to health? (%)					
Boys	5.2	2.8	70.4	7.4	14.2
Girls	5.8	3.1	75.8	4.9	10.4
Is passive smoking harmful to health? (%)					
Boys	6.8	2.8	63.3	16.0	11.0
Girls	6.3	2.0	73.1	13.5	5.2

The level of awareness on harms of tobacco use among my study respondents is lesser compared to what has been reported by other Indian studies done among young students. GYTS Karnataka[1] revealed that 80% of students believed tobacco use is definitely harmful to their health compared to 75.9% of students in my study believing the same. Studies from Northern India including Jaipur (99.3%), Delhi (80%) and Bihar (80.3%) revealed relatively higher level of awareness regarding harmful effects of tobacco use on health among students.[2–4]

As depicted in Table 4.2, most of the students (76.2%) reported that tobacco products are not useful in any ways. More girls compared to boys said so. A very few students who said that tobacco is useful mainly believed that use of tobacco 'gives a kick to the body' or 'relieves tension'. A few students also believed that use of tobacco is good for teeth, e.g. 'It helps in teeth pain and cold…'. Other perceived advantages of tobacco included 'for fun' or 'for time-pass'. During one of the FGDs, boys also mentioned the usefulness of tobacco to farmers and to the economy in general:

> *someway, tobacco is useful because our farmers are earning profits. Government is also like get more revenue… .*

PERCEPTIONS ABOUT TOBACCO USERS

Perceptions About Adult Smokers in Indian Society

An attempt was made to understand students' perceptions about smokers in Indian society and to what extent these perceptions vary depending on tobacco use status of students. Students were asked questions such as 'what do you feel when you see a man/woman smoking?' and were provided a set of positive and negative perceptions (as adapted from GYTS India questionnaire) apart from an open-ended option to provide any other perceptions. Figures 4.1 and 4.2 provide never users' perceptions while Figures 4.3 and 4.4 provide current users' perceptions about man and woman smokers, respectively. Data on current users' perceptions do not include girls' responses due to

Table 4.2 Perceived usefulness of tobacco products.

	Yes	No	Not sure
Is smoking useful in some ways? (%)			
Boys	2.0	67.0	31.0
Girls	1.0	80.0	19.0
Is chewing tobacco useful in some ways? (%)			
Boys	5.0	73.0	22.0
Girls	1.0	88.0	11.0
Is tobacco application useful in some ways? (%)			
Boys	2.0	69.0	29.0
Girls	1.0	80.0	19.0

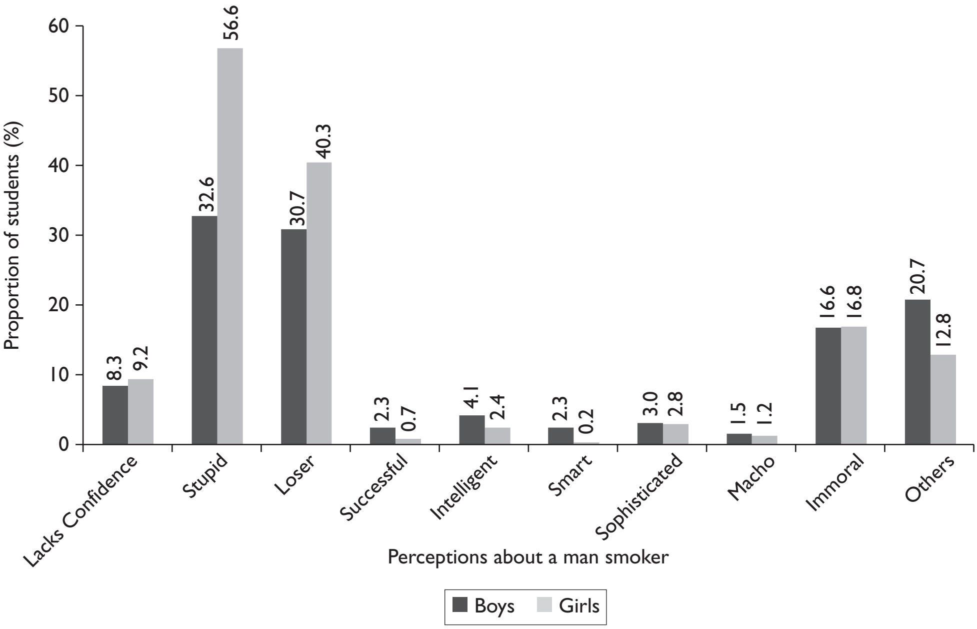

Figure 4.1 Never users' perceptions about a man smoker.

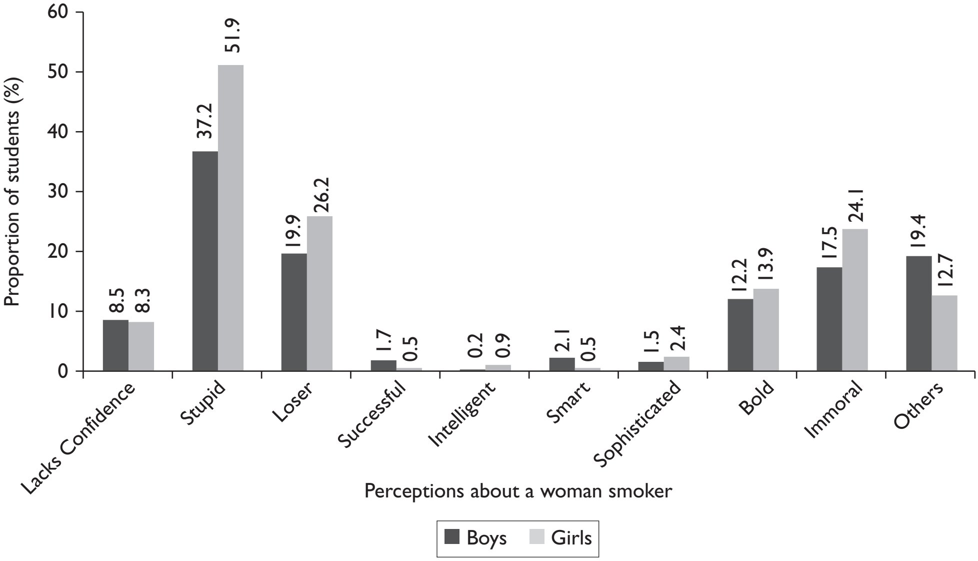

Figure 4.2 Never users' perceptions about a woman smoker.

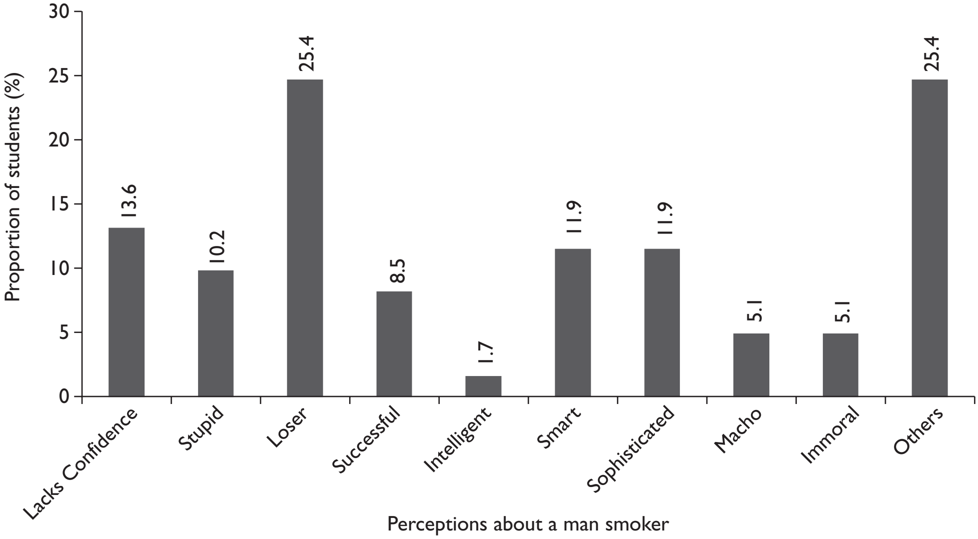

Figure 4.3 Current users' (boys) perceptions about a man smoker.

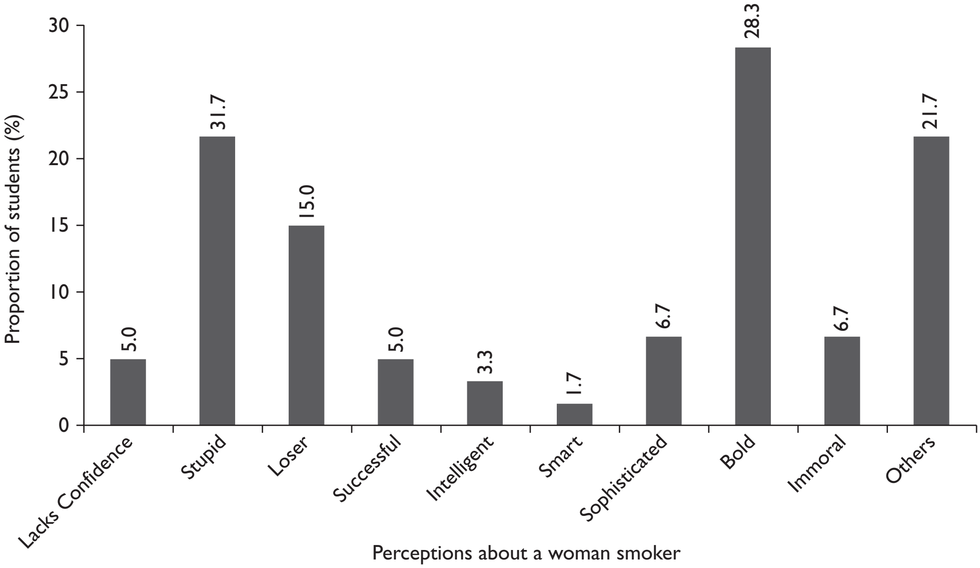

Figure 4.4 Current users' (boys) perceptions of a woman smoker.

very limited number of respondents in this category (n = 9). As depicted in these figures, major proportion of boys, both the never users (88.2% in case of a male smoker and 83.1% in case of a female smoker) and the current users (54.3% in case of a man smoker and 48.4% in case of a woman smoker) reported negative perceptions about both man and woman smokers. This observation of having predominantly negative perceptions about smokers was similar among girls. In fact, among girls who never used tobacco, negative perceptions about both man and woman smokers were accentuated when compared to boys who never used tobacco. Negative perceptions about both man and woman smokers by never users included responses such as smoker being ‘stupid’, ‘looser’, ‘immoral’ and someone who ‘lacks confidence’ in a descending order of prominence.

Comparatively, boys who were currently using tobacco had more positive perceptions about both man and woman smokers compared to those who never used tobacco, e.g. 39.1% vs 13.2% in case of a man smoker and 45% vs 17.7% in case of a woman smoker. Positive perceptions included smoker being ‘successful’, ‘intelligent’, ‘smart’ and ‘sophisticated’. Interestingly, 13% of never tobacco users (12.2% boys and 13.9% girls) and 28.3% of boys who were current users of tobacco felt that women who smoke appear ‘bold’.

Analysis of students’ responses provided under ‘others’ category underscores the role of gender in defining smokers’ perceptions by students. Boys felt that smoking is not normal for women and particularly so for Indian women. Those women who smoke have ‘no manners’ and have no sense of belonging to Indian culture. This is evident from their responses:

> *Girls should never smoke. …She does not know that she is a girl. …They do not belong to Indian women.*

One of the respondents went on to say that *‘India has lost its future/culture’*. In this context, some of the boys felt that women smoke in order to be equal to men:

> *she may think a man can smoke, why can’t a woman do that…she is trying to be equal to man.*

Compared to boys, fewer girls commented on gender and tobacco use but those who commented expressed very basic concern on use of tobacco by women:

> *Being a girl, how can she even loose her standard? …She is not fit as a woman. They are insulting our culture. …They are foreigners.*

A few of the girls who never used tobacco reported that the reason for never trying tobacco was that they were girls, e.g. *“I am a girl. How can I use tobacco?”* These responses reflect the internalization of the larger norms around gender in society.

Another prominent theme that emerged from boys’ responses and was typically absent in girls’ responses regarding women who smoke was about women’s character. Boys felt that women who smoke are of bad character. Interestingly, these perceptions that smoking by women reflects bad on Indian culture and women’s character, and that smoking by women is not normal/acceptable holds true only in case of smoking by woman. None of the students (whether boys or girls) perceived the association of smoking by men with any such negative social or cultural connotations.

Perceptions About Youth Tobacco Users

Interestingly, 8% of students (11.4% of boys and 3.3% of girls) felt that smoking makes boys look more attractive while 5.2% of students (7% of boys and 2.9% of girls) felt that smoking makes girls look more attractive. Similar pattern of responses were found in regard to whether chewing tobacco makes boys/girls look more attractive. Furthermore, 25% of students (25.5% of boys and 23.8% of girls) felt that boys who smoke or chew tobacco make more friends while 11.4% of students (11.7% of boys and 10.9% of girls) felt that girls who smoke or chew tobacco make more friends. These perceptions reveal the favourable appeal that tobacco use makes within social networks of young students.

GYTS India reported similar pattern of responses regarding perceptions of student tobacco users, but these perceptions were more prevalent compared to our findings. In that, 30% of students felt that boys who smoke appear more attractive and 19.9% of students felt that girls who smoke appear more attractive. Also, 32.2% students felt that girls who smoke have more friends while 16.8% students felt that girls who smoke have more friends.[5]

ATTITUDES TOWARDS FUTURE TOBACCO USE

Students' attitudes were explored in regard to whether they would like to take up tobacco use in future or whether current tobacco users would like to quit. Nearly 3.9% of students (5.8% boys and 1.3% girls) expressed that they would like to take up tobacco use in future while 14.7% of students (20.9% boys and 6% girls) were not sure regarding their will for future uptake of tobacco use. On the other hand, 49.3% (n = 34) of current tobacco users (47.5% boys and 62.5% girls) were considering quitting tobacco.

GYTS India revealed that 15.1% of never smokers were likely to start smoking in the next year while 70.6% of current smokers wanted to stop smoking.[5]

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Chapter Five

Correlates of tobacco use

This chapter provides insights into possible influences of various factors on the use and non-use of tobacco products by students. This description draws on students' perceived influences of various factors on the use and non-use of tobacco products, including a bivariate analysis of correlation between tobacco use as an outcome variable and a set of selected exposure variables.

REASONS FOR UPTAKE OF TOBACCO USE

Common self-reported reasons for smoking as well as chewing tobacco were fairly identical. For smoking, the common reasons included 'friends' followed by 'stress/ tension' and 'curiosity', while for chewing tobacco it included 'friends' followed by 'family' and 'curiosity'.

Peer Influence and Tobacco Use

The most common reason for trying any tobacco products appeared to be the peer influence. Prevalence of ever tobacco use and current tobacco use among the students with none of their friends using tobacco was only 3.2% and 0.6%, respectively. On the other hand, among the students whose friends were using tobacco, the prevalence of ever tobacco use was 44.1% and that of current tobacco use was 28.7%. Students having tobacco-using friends were 7.7 times more likely to be ever users of tobacco compared to students having tobacco-free friends (95% CI: 4.6–13.0). This association between tobacco use by students and having tobacco-using friends was statistically significant ($P < 0.001$) and showed a graded response, i.e. students having only some of the friends using tobacco had lowest prevalence of both, ever and current tobacco use while the students with all of their friends using tobacco had maximum prevalence of both, ever and current tobacco use. Please refer to Figure 5.1 for details.

These findings from the survey corroborated with insights gained from focus group discussions. Regarding peer influence as a reason for tobacco use, students reported simple influence to actually being forced to use tobacco by friends:

> *I got tempted by looking at my friends. I tried smoking when I saw my friends smoking and since then it became a habit. My friends were smoking so they forced me to smoke. I tried and now I have become a chain smoker.*

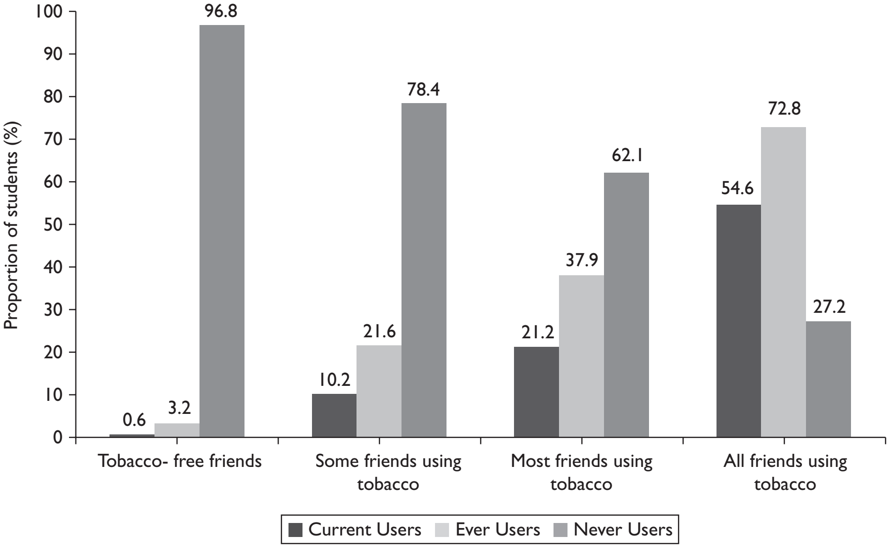

Figure 5.1 Correlation between youth tobacco use and having friends using tobacco.

In fact, most of the tobacco users, who mentioned peer pressure as a reason for starting tobacco use, reported that they were forced by their friends to start tobacco use:

> *In a group of ten, if eight are smoking, rests two are just watching them. They feel what is there in smoking, let's try it and later they start smoking. They mainly learn from their friends and that is the main reason youngsters start tobacco use.*

The importance of peer influence in uptake of tobacco use by youth in India has been echoed by many previous studies. A study done among pre university students in Bangalore city revealed that 'influence from friends' was the most common reason for uptake of tobacco by ever tobacco users (reported by 25.5% of ever users) and the second most common reason, after 'addiction', for continuing tobacco use by current tobacco users (reported by 18.8% of current users).[1] Furthermore, studies from Delhi[2] and Mumbai[3] also revealed influence from friends as the most common reasons for uptake of tobacco use by students. Another study among college students in Karnataka reported similar findings, with 'encouragement from friends' as the second most common reason for students to start smoking.[4] A study from Bihar among younger students (10–12 years of age) revealed a significant correlation between student tobacco use and their friends using tobacco.[5] Hence peer influence appears to have a prominent role in uptake of tobacco use by students.

Stress, Curiosity and Tobacco Use

The second most common self-reported reason for starting smoking was 'to relieve stress or tension'. Various factors such as study burden, love failures and work life (for working students) were reported as stressors:

> *There might be a pressure. Something might be going in their mind…many types of tension…study tension, love failure etc. …they use it mainly as a stress buster.*

The third most common self-reported reason for starting smoking was curiosity to try out tobacco products:

> *I just wanted to experiment with it and some of my friends gave me a dare to smoke. I tried smoking to know how it tastes… .*

Stress has been demonstrated as one of the influence in initiation of tobacco by pre university students in Bangalore.[1] Also, a study by Mukharjee and Hadaye[3] revealed a statistically significant association between stress and uptake of smokeless tobacco by secondary school students in Mumbai.

Style/Fashion and Exposure to On-Screen Tobacco Use

Other reasons for trying tobacco products included 'style or fashion', 'just for fun/ pleasure' and 'for time pass'. 'Style or fashion' was reported as the fourth common reason for trying smoking and the third common reason for trying chewing tobacco. Exposure to portrayal of tobacco use in cinema or in television (TV) appeared to have influence on uptake of tobacco by young students:

> *Fashion is the main reason they smoke… . They see in movies. Like Ajay Devagan (a popular Bollywood film star) use tobacco.*

In response to a question of 'Do you feel like using tobacco when you see movie/TV stars using tobacco?', 17.9% of boys (95% CI: 15–21.3) and 6.3% (95% CI: 4.3–9.1) of girls reported in the affirmative. Students who said that they felt like using tobacco following exposure to onscreen tobacco use were also significantly more likely to be ever tobacco users compared to students who did not report such influence of onscreen tobacco use on them (RR: 3.1; 95% CI: 2.3–4.1; $P < 0.001$).

Previous studies among youth from Karnataka demonstrated that 'to appear in style' or 'to show off' were the common reasons reported by student users for taking up tobacco.[1,4] Exposure to tobacco advertisements and to portrayal of tobacco use by TV/film actors appears to glamorise tobacco use and influences youngsters to take up tobacco. Prevalence of ever and current tobacco use among young school students (10–12 years of age) was shown to be significantly associated with students' exposure to tobacco advertisements in media and the use of tobacco by actors in films/TV.[5] Another study among adolescents from lower income communities of Delhi revealed that 23% of student tobacco users were influenced by their exposure to tobacco advertisements in mass media.[2] A study among school students (6th–9th grades) from Delhi and Chennai revealed that exposure to tobacco advertisement was strongly associated with increased tobacco use among younger (6th grade) students, while this association was not statistically significant among comparatively older students (8th grade), possibly suggesting lower refusal skills for such influence among younger students.[6]

Family Influence and Tobacco Use

The prevalence of ever tobacco use and current tobacco use among students with one or more of their family members (father/mother/siblings) using tobacco was 22.4% and 10.4%, respectively. These indicators (prevalence of ever and current tobacco use) among the students with none of their family members using tobacco were only 11% and 4.8%, respectively. Students having their family members using tobacco were significantly more likely to be ever tobacco users (RR = 2, 95% CI = 1.5–2.7) and current tobacco users (RR = 2.2, 95% CI = 1.4–3.4) compared to students having tobacco-free family members. Figure 4.2 reveals positive association between tobacco use by students and that by at least one of the parents. Students with at least one of the parents using tobacco were significantly more likely to be ever tobacco users (RR = 1.8, 95% CI = 1.4–2.4) and current tobacco users (RR = 1.7, 95% CI = 1.1–2.7) compared to students with tobacco-free parents.

Some students (8.7% of boys and 5.1% of girls) reported that they felt like using tobacco when they saw their family members using tobacco. Family members who use tobacco products not only influence young adolescents within the family but also provide opportunity for them to try out tobacco products:

> *My cousin brother was smoking in front of me when I was 11 years old. He left half of it (cigarette) in the ashtray and went out. I felt tempted to try one puff of it and started smoking… . I tried chewing tobacco as my uncle gave me once when I was a child.*

The influence of family members on using tobacco was more commonly reported in case of chewing tobacco.

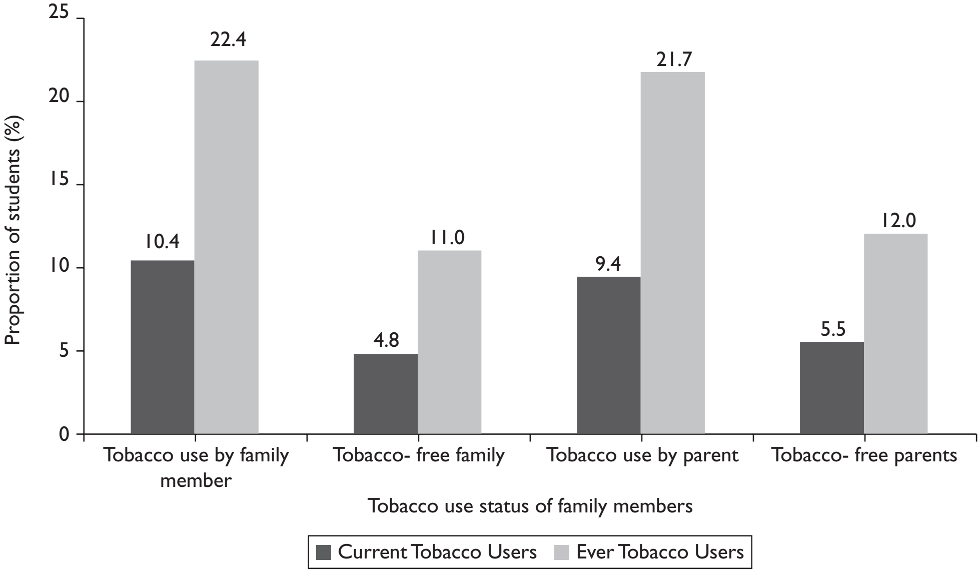

Figure 5.2 Correlation between youth tobacco use and having family members using tobacco.

Singh et al.[5] studied school students in Bihar and found a significant association between ever tobacco use and use of tobacco by family members of students. A study from Kerala showed that prevalence of current tobacco use was two times higher among boys whose fathers also used tobacco compared to those students whose fathers did not use tobacco.[7] Similarly, in Chennai, more of student tobacco users reported their parents using tobacco compared to never users.[8] A recent GYTS in India revealed that 26.4% of students had one or more parents who were current smokers.[9] These observations reveal that students are vulnerable to such influence.

Apart from the self-reported factors, we explored association between tobacco use and some of the variables such as age gender, students' knowledge about tobacco use and pocket money received by students.

Age and Tobacco Use

With an increase in the age, the prevalence of ever tobacco use among pre-university students also increased. In general, prevalence of current tobacco use increased with age except in the youngest (of 15 years or below) and the eldest age group (of 19 years or above). These two extreme categories represented fewer students compared to other categories (see Figure 5.3).

In general, tobacco use prevalence has been shown to increase with increase in age and flattening up after an age of 50 years.[10] Mohan et al.[7] in their study among students in Kerala, found age-wise increase in tobacco use. However, among youngsters, this does not seem to be a consistent finding. A study by Stigler et al.[6] among relatively younger school going students (6th–9th grades) from Delhi and Chennai revealed that even after adjusting for age, sex, school type and city, tobacco use was

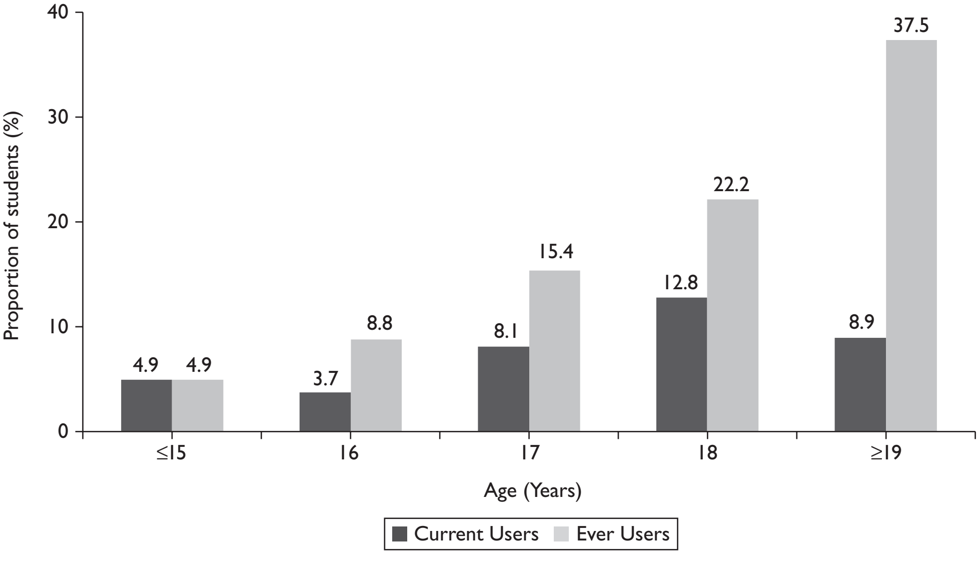

Figure 5.3 Correlation between age and youth tobacco use.

significantly more among younger students (6th grade) compared to elder students (8th grade), both in terms of ever tobacco use (21.8% vs 6%) and current tobacco use (6.7% vs 2.2%). Also, a study among younger students (10–12 years of age) in Bihar revealed that the prevalence of ever tobacco use and current tobacco use among those below 10 years of age was higher compared to students of 10 and 11 years of age.[5] These studies along with observation from our study indicate the possibility of younger students being at higher risk of using tobacco compared to older students. However, there is a need for larger systematic studies across regions to verify this correlation between age and tobacco use.

Gender and Tobacco Use

As shown in Table 3.1, the proportion of boys (21.7%) trying tobacco use was higher compared to girls (5.3%). In case of the current tobacco use, this difference was further accentuated with proportion of boys currently using tobacco being seven times higher compared to girls. This gender bias in prevalence of tobacco use has been a constant feature in previous studies irrespective to age groups.[11–13] Boys were 4.2 times (95% CI = 2.8–6.4) more likely to use tobacco compared to girls and this association was statistically significant ($P < 0.001$). During the FGDs, both male and female students perceived the similar pattern of tobacco use along the gender line.

Some of the observations made in our study explain, at least partly, this gender-based difference in tobacco consumption. As discussed in the Chapter 4, gender is one of the basic factors that determines social acceptance (or rejection) of tobacco use, where tobacco use by women is perceived socially unacceptable. Also, as shown in Table 4.1, the awareness on harms of tobacco use was greater among female students compared to male students.

School Type/Study Stream and Tobacco Use

It is interesting to note that 19.4% of students studying in science stream tried tobacco use followed by those studying in arts/humanities stream (15.2%) and commerce stream (12%). However, this difference was statistically significant only between students from science stream and commerce stream ($RR = 1.6$, $P < 0.05$). Prevalence of current tobacco use was highest among arts students (9.8%) followed by science students (8.6%) and commerce students (5.9%). This difference in prevalence of current tobacco use based on a study stream was statistically significant between students from science and commerce streams ($RR = 2.1$, $P < 0.05$). The proportion of tobacco users was the highest in Aided PUCs followed by Government PUCs and Unaided PUCs (see Figure 5.4). However, these differences were not statistically significant.

Aided PUCs are funded by government, but are managed by private management bodies. In general, prevalence of tobacco use has been found to be higher among students from government (public) schools compared to students from private schools. A study among students of 8th–10th grades in Chennai revealed that the prevalence of ever and current tobacco use among students in corporation (local governance)

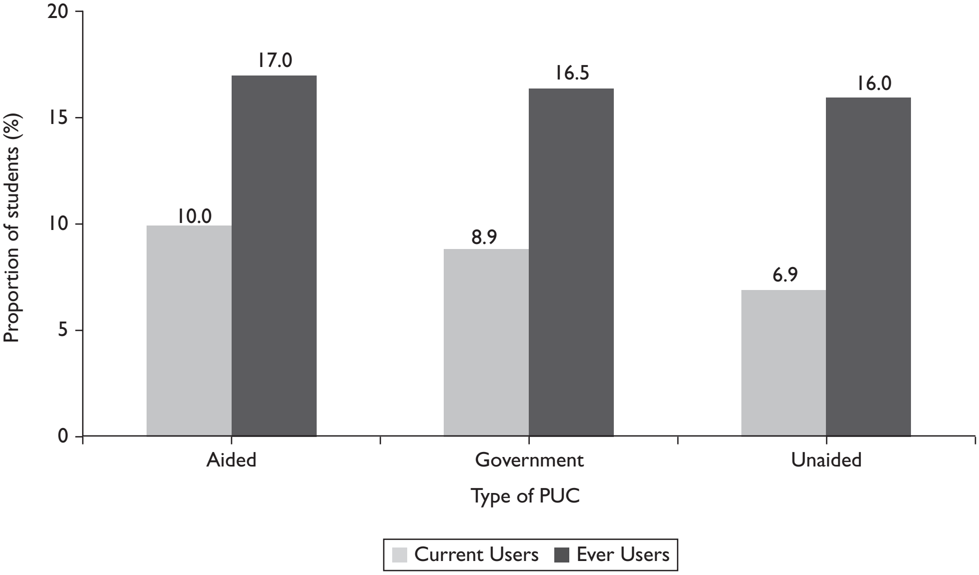

Figure 5.4 Correlation between PUC types and youth tobacco use.

schools was higher compared to students in private schools (ever tobacco use: 55.6% vs 28.9%, current tobacco use: 19.3% vs 14.3%).[8] Our findings corroborated with the findings of a study among students in Kerala that revealed the prevalence of both ever tobacco use and current tobacco use was highest among students from aided schools (ever use: 43.2%, current use: 15.8%) followed by government schools (ever use: 37.8%, current use: 12.4%) and unaided schools (ever use: 22.7%, current use: 5.6%).[7]

Study Performance and Tobacco Use

Percentage of marks received in 10th grade was taken as a proxy measure to assess study performance. As depicted in Figure 5.5, the association between study performance and ever tobacco use resulted in 'U'-shaped trend where students with an average performance used least and students with the worst or the best performances used more tobacco.

There have been few studies exploring association between educational performance and tobacco use among youth in India. Mohan et al.[7] studied students from Kerala and found that students with poor study performance (receiving less than 40% marks) were three times more prone to use tobacco compared to students with higher study performance (receiving 80% or more marks). Also, a study by Mukharjee and Hadaye[3] in Mumbai revealed a significant association between poor academic performance and a greater probability of smokeless tobacco use among students in Delhi.

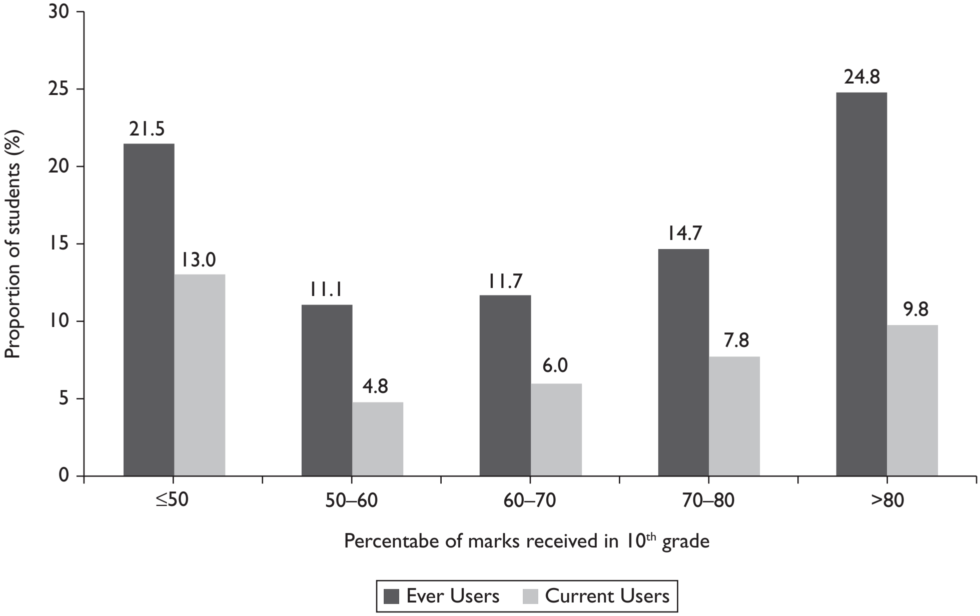

Figure 5.5 Correlation between study performance and youth tobacco use.

Pocket Money and Tobacco Use

Our study collected data on money received per week by students from their family for their pocket expenses. Prevalence of ever tobacco use and current tobacco use was found to be higher among those receiving pocket money (ever use: 17.9%, current use: 9.5%) compared to those who did not receive pocket money (ever use: 11.4%, current use: 4.7%). This association between pocket money and student tobacco use was statistically significant. Students receiving pocket money were significantly more likely to be ever tobacco users (RR = 1.7, P < 0.001) as well as current tobacco users (RR = 2.9, P < 0.001) compared to students not receiving pocket money. Furthermore, students were classified into four quartiles (First quartile: ₹40 or less; Second quartile: more than ₹40 and less than or equal to ₹50; Third quartile: more than ₹50 and less than or equal to ₹100; Fourth quartile: more than ₹100) and tobacco use was measured in each quartile. As shown in Figure 5.6, with an exception of second quartile, in general, prevalence of ever and current tobacco use increased with an increase in an amount of the pocket money received by students.

Mohan et al.[14] studied students form Kerala and reported similar findings with students receiving pocket money being more likely to use tobacco compared to students not receiving pocket money. Also, students receiving more pocket money were

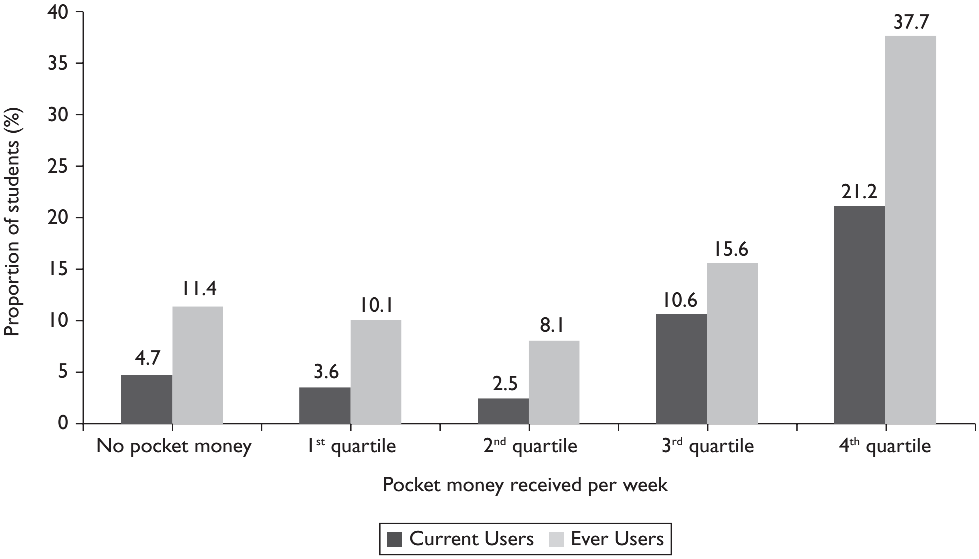

Figure 5.6 Correlation between pocket money and youth tobacco use.

more likely to use tobacco compared to students receiving less pocket money.[15] Singh et al.[5] also reported significant association between pocket money received per day and tobacco use by students in their study among students from Bihar.

REASONS FOR REFRAINING FROM TOBACCO USE

Awareness on Harmful Effects of Tobacco Use

The most important reason for never trying tobacco use appeared to be the realisation of the fact that it is harmful to health. Nearly 78% of never tobacco users mentioned that they never tried tobacco use because they knew that tobacco is harmful to health. Figure 5.7 reveals the association between tobacco use by pre-university students and their knowledge about harmful effects of tobacco use. Prevalence of ever tobacco use as well as current tobacco use was lesser among students who were aware of harmful effects of tobacco use compared to those who believed that tobacco use was not harmful to health. Students, who reported that all forms of tobacco use (smoking, chewing and application) are harmful to health, were nearly at half the risk of being ever tobacco users (RR = 0.5, $P < 0.05$) compared to students who reported that all forms of tobacco use are not harmful to health. However, the association between awareness on harmful effects of tobacco on health and the current tobacco use (RR = 0.5) was not found to be statistically significant ($P > 0.05$).

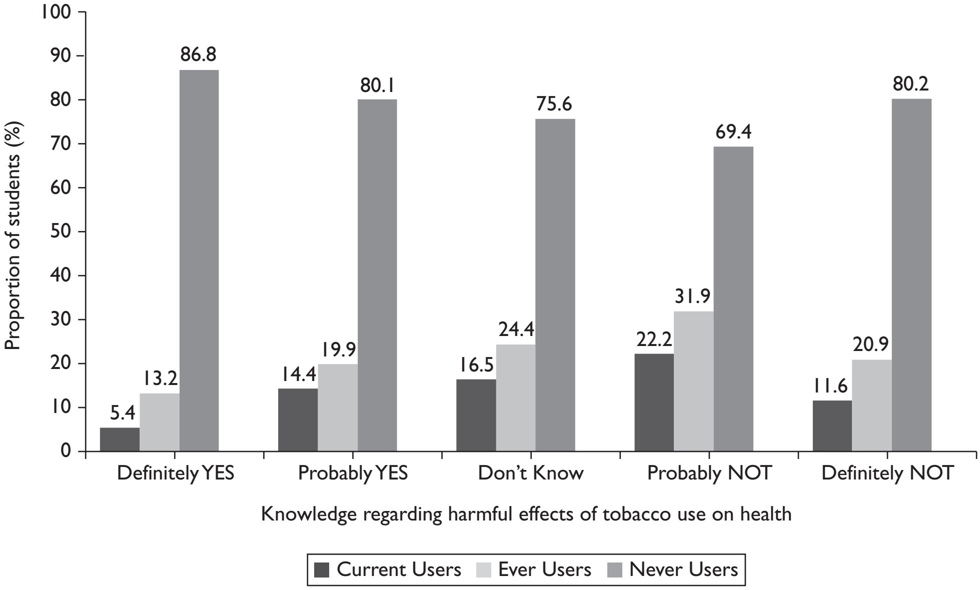

Figure 5.7 Correlation between tobacco use by students and their awareness on harmful effects of tobacco on health.

Smell of Cigarette Smoke as a Deterrent

Interestingly, the second most common reason (reported by 4.6% of never smokers) for never trying tobacco products was that students hated the smell of tobacco smoke:

> *I never thought about that (smoking) because of its smell. It is like vomiting… .*

Protective Influence of Tobacco-Free Family

The third common reason reported by students for never trying tobacco use was the protective influence of their family members. Students were either inspired by tobacco-free behaviour of their family members or they were scared of their family members:

> *My family members do not use tobacco so even a thought (of using tobacco) doesn't come to my mind. I never tried tobacco because of the fear of my father.*

Other Reasons

Other reasons for never trying tobacco included 'It is a waste of money', 'Positive influence of tobacco-free friends' and 'spirituality/religion'. A few students claimed that it was the values and principles they believed in that they never tried tobacco:

> *My friends forced me to have a cigarette but I did not gave up my principles.*

It is interesting to note that the influence of friends and family had both positive and negative effects. On the one hand, peer influence was the most common reason for students to start tobacco use, while on the other hand, a few never tobacco users credited their tobacco-free friends as a reason for never trying tobacco use. Similarly, though a few tobacco users reported that they started tobacco use under influence of their family members who used tobacco, the third most common reason given by students for never trying tobacco was that their family members never used tobacco.

TOBACCO USE AND USE OF OTHER ILLICIT SUBSTANCES

As shown in Figure 5.8, our study showed an association between tobacco use and the use of other illicit substances, particularly the use of alcohol. Our study found that 43% of ever tobacco users and 51% of current tobacco users also used alcohol, while only 6% of never tobacco users used alcohol. Students during all the FGDs mentioned such association:

> *…those who smoke also drink and those who drink also smoke. It is like if you smoke while drinking it becomes more powerful.*

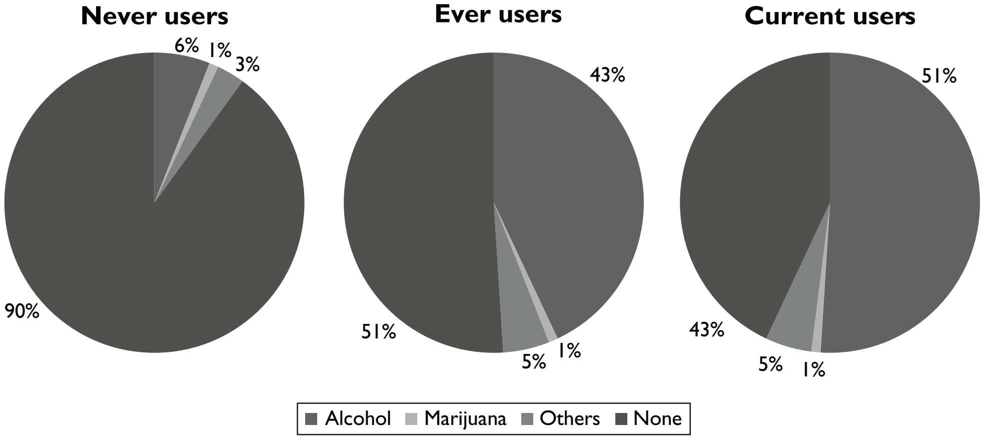

Figure 5.8 Tobacco use and the use of other illicit substances.

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Chapter Six

Tobacco control measures

This chapter draws on the findings of the survey, focus group discussions and photo documentations in order to reflect on status and enforcement of tobacco control measures, including selected provisions of the Cigarette and Other Tobacco Products Act, 2003 (COTPA). While doing this, I first describe briefly the selected provisions of COTPA.

PROHIBITION OF SMOKING IN PUBLIC PLACES

Section 4 of the COTPA (2003) states that no person shall smoke in public places.[1] COTPA defines 'public places' as 'any place to which the public have access, whether as a right or not, and includes auditorium, hospital buildings, railway waiting room, amusement centres, restaurants, public offices, court buildings, educational institutions, libraries, public conveyances and the like which are visited by general public...'.[2] Hence, the pre-university colleges (PUCs) are also public places under this law.

Rules under this particular provision were first notified on 25 February 2004.[1] According to these rules, the owner or the manager in charge of the affairs of a public place shall display a prominent board, at least one at the entrance of the public place and one at the conspicuous place(s) inside, providing a clear warning that 'No Smoking Area – Smoking Here is an Offence'. These rules came into force on 2 October 2008. In these final rules, it was further required to also put a name of the person, as part of the display board, to whom violations can be reported. Our study was conducted well after these rules came in force. None of the 19 sampled PUCs displayed notices/boards or any other means to convey 'no smoking warnings' pointing to poor implementation of these rules by concerned authorities.

Students were asked to respond to a question of 'During the past seven days (one week), on how many days have people used tobacco in your presence, in places other than in your home?'. The purpose was that it would give some proxy idea regarding the extent that students were exposed to tobacco use, mostly at public places. As depicted in Figure 6.1, 55.8% of students were exposed to tobacco use by others outside their home. In fact, 36.5% of students were exposed for all the days in a week to others using tobacco in their presence, suggesting significant amount of exposure to tobacco use by people mainly at public places. We also observed a significant association between students' exposure to tobacco use by others and students' tobacco use status. Students who were exposed to others using tobacco were 1.7 times more likely to be ever tobacco users ($P < 0.001$) and 2.9 times more likely

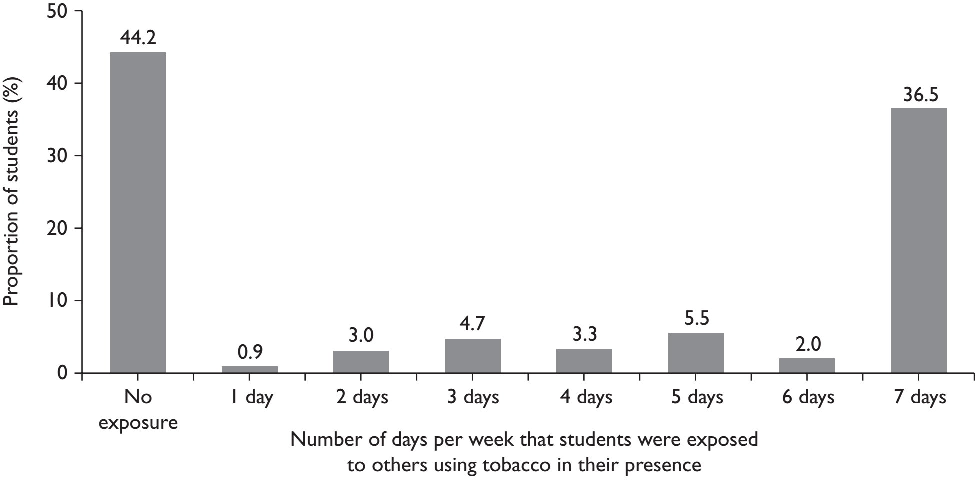

Figure 6.1 Exposure of students to others using tobacco in their presence.

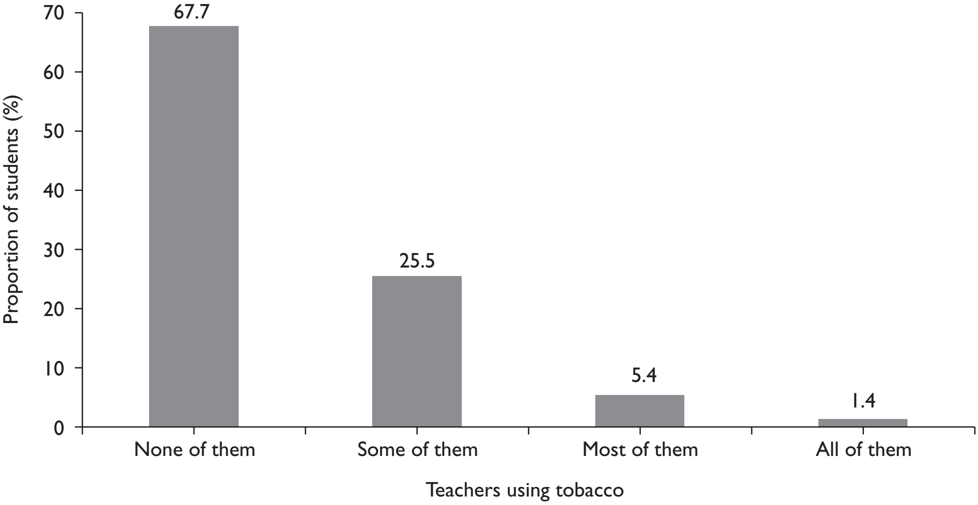

Figure 6.2 Exposure to teachers using tobacco.

to be current tobacco users (P < 0.001) compared to students who were not exposed to tobacco use by others.

PUCs and, in that matter, any educational institution are defined as public places under COTPA. Hence, use of tobacco by school personnel within school premises is a legal offence. In our study, 32.3% of students reported seeing their teachers using tobacco and 50.5% of students reported seeing non-teaching school staff using tobacco. Figures 6.2 and 6.3 provide details on these variables. Use of tobacco by school personnel can have influence on students' uptake of tobacco use. Students who were exposed to tobacco-using teachers were found to be three time more likely to

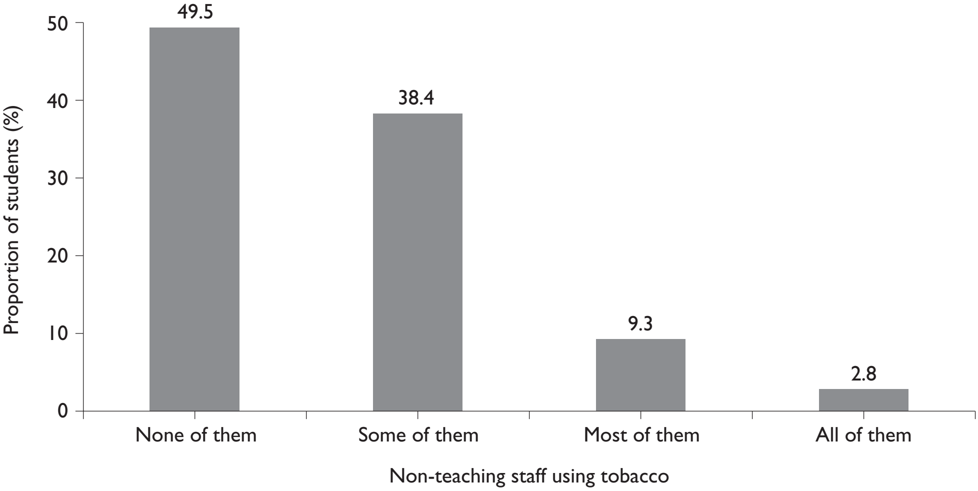

Figure 6.3 Exposure to non-teaching school staff using tobacco.

be ever tobacco users and nearly five times more likely to be current tobacco users compared to students who were not exposed to tobacco-using teachers. Similarly, students who were exposed to tobacco use by non-teaching school personnel were two times more likely to be ever tobacco users and three times more likely to be current tobacco users compared to their counterparts. These associations were found to be statistically significant.

Unfortunately, tobacco use by school personnel has remained a common observation in India. The Global School Personnel Survey 2006 (GSPS) India revealed that 29.2% of school personnel (35% men and 13.7% women) were current users of any tobacco products.[3] In South India, 20.9% of school personnel (25.7% men and 8.2% women) were current users of any tobacco products.[4]

REGULATION OF TOBACCO SALE

Sale of any tobacco products to any person below 18 years of age, as well as sale of tobacco in an area within a radius of 100 yards (around 300 feet) of campus of educational institutions have been prohibited under the section 6 of the COTPA.[1] The rules under this section came into force from 1 May 2004. According to these rules, tobacco sellers are required to put up a display board at the point of the sale reading that 'Sale of tobacco products to a person under the age of eighteen years is a punishable offence' and the onus of the proof that the buyer is not a minor lies with the seller of tobacco products.[1]

Sale of Tobacco to Minors

Of the current smokers, who were below the 18 years of age, 59.2% purchased their tobacco products directly from the tobacco vendors. When asked about such practices by tobacco vendors, student reported the grim status of either not having such display boards or selling tobacco to minors despite having display boards:

> *They should not sell to minors. But in every shop they are selling. There are boards* (saying that tobacco would not be sold to minors) *in some shops but they still sell. Also, we are not seeing such boards frequently... .*

Of these 59.2% of minors who purchased their tobacco products directly from vendors, 18.3% actually purchased loose cigarettes/*bidis* (as opposed to purchasing a pack of cigarettes/*bidis*). Rest 40.9% of current smokers did not purchase their tobacco themselves and got those products from someone else. Availability of loose cigarettes and *bidis* made it affordable for students to purchase and use them:

> *Almost all shops sell loose cigarettes. Very few rich people only buy packets… . Packet will cost 40–45 rupees while they can get loose cigarettes at a cost of 2, 2.5, 3 or 3.5 rupees per cigarette.*

The GYTS Karnataka conducted among students aged 13–15 years in 2003–2004 revealed that 30.8% of current tobacco users purchased tobacco products from tobacco selling shops.[5] A study conducted among same age group students from Chennai in the adjoining state of Tamil Nadu in the year 2005 also revealed that a significant proportion (82.5%) of students purchased tobacco products from tobacco selling shops.[6] Authors of that study noted that *"…almost no one was refused (to purchase tobacco) because of age"*.[7] Singh et al.[8] in their study among school children

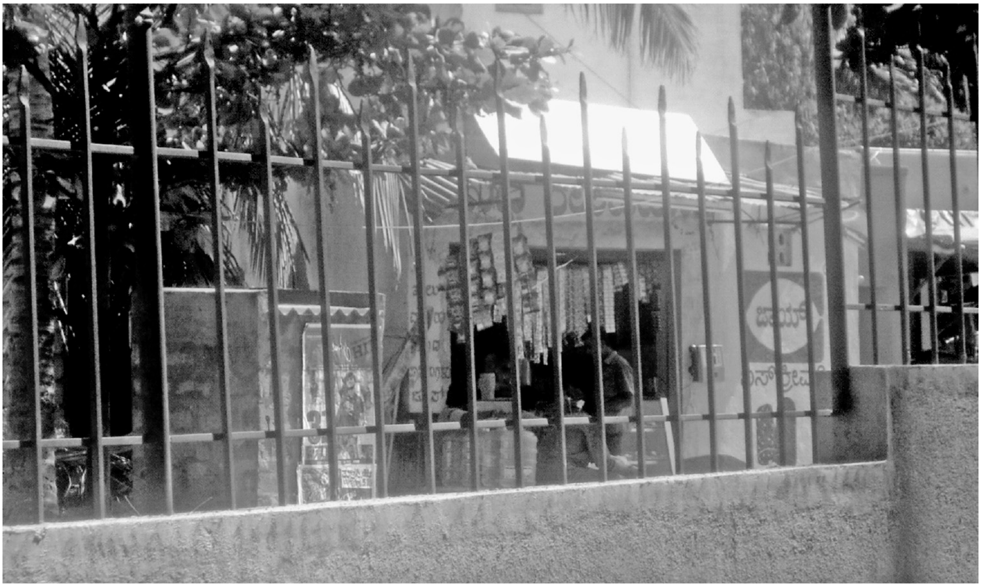

Figure 6.4 Sale of tobacco near educational institutions.
Shop selling tobacco products near pre-university college campus – Photo taken from compound of one of the sampled pre-university colleges.

from Delhi with a mean age of 14.2 years reported that nearly 84% of children were able to freely purchase tobacco products from stores or street vendors. Also, the GYTS India (2006) found that 51.3% of current smokers bought cigarettes from stores and 72.5% of these smokers were not refused the purchase because of their age.[9] These studies indicate poor enforcement of this particular provision.

Sale of Tobacco Near Educational Institutions

Our study found that 18 of 19 sampled PUCs that were surveyed had one or more tobacco selling points within 100 yards of their campuses. Often, these selling points were located just across the road. These violations were photo documented. Furthermore, none of these tobacco selling points found near sampled PUCs displayed a board reading that tobacco sale to minors is a punishable offence.

MEDIA PROMOTION OF TOBACCO USE

Section 5 of the COTPA prohibits the advertisement of cigarettes and any other tobacco products through electronic or print media except on a pack of the tobacco product or at the entrance/inside of the warehouse or shops storing/selling tobacco products.[1]

Exposure to Tobacco Advertisements on the Television

Students were asked to report if they had seen advertisements or brand names of tobacco products on the Television (TV) in a week preceding the survey. For the ease of recall and categorisation, students were asked to categorise their responses regarding their exposure to TV advertisements/brand names in three categories, i.e. 'Sometimes', 'A lot of the times' and 'Never'. Students were asked to report separately for cigarettes, *bidis* and chewing tobacco products (*gutka, khaini* and *panmasala* with tobacco). As depicted in Figure 6.5, a significant proportion of students who watched TV, 50.5% in case of cigarettes (n = 938), 39.8% in case of *bidis* (n = 913) and 57.2% in case of chewing tobacco products (n = 899), reported seeing advertisements or brand names of these products on TV in the week preceding the survey. Exposure to advertisements of chewing tobacco products was highest followed by cigarettes and *bidis*.

Prevalence of the ever tobacco use and the current tobacco use among students who were exposed to tobacco advertisements was 16.9% and 6.8%, respectively. On the other hand, prevalence of the ever tobacco use and the current tobacco use was relatively lower at 11.5% and 5.6% among students who were not exposed to tobacco advertisements. Students, who were exposed to tobacco advertisements were significantly more likely to be ever tobacco users compared to their counterparts (RR = 1.5, $P < 0.05$). Association between the exposure to tobacco advertisements and the current tobacco use by students was not found to be statistically significant.

The GYTS India (2006) reported that 71.6% students had seen tobacco advertisements on billboards in 30 days preceding the survey and 11.1% of students were offered free cigarettes by tobacco company representatives.[9]

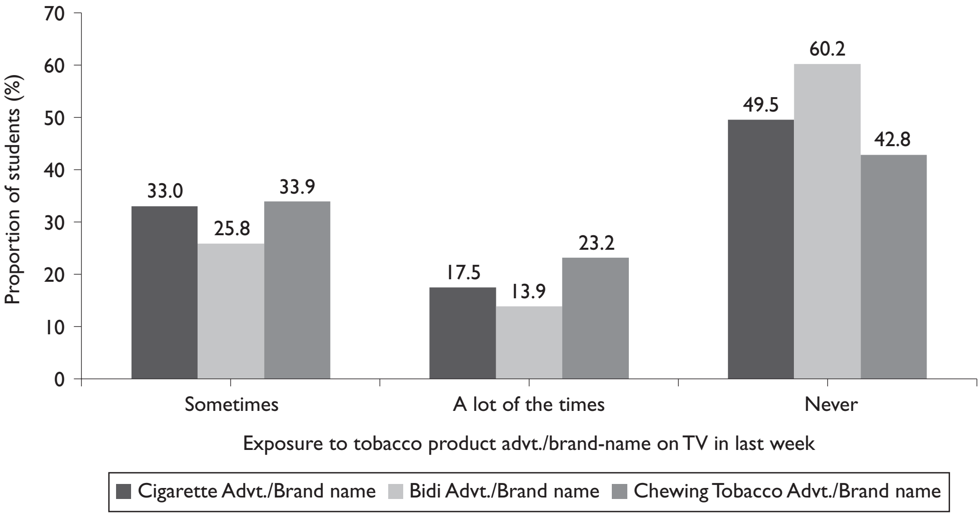

Figure 6.5 Exposure to tobacco product advertisements/brand names on TV.

Exposure to On-Screen Tobacco Use

Students were also asked to report if they had seen actors smoking on TV or in films in the last one year. The current guidelines regarding the film certification by the Central Board for Film Certification (India) specify that scenes that tend to encourage, justify or glamorise tobacco use shall not be shown.[10] A total of 93.8% of students who watched TV/films in the last one year (n = 999) reported seeing actors smoking on screen (48.1% reported seeing for sometimes, 45.6% reported seeing a lot of the times). As described in the Chapter 5, exposure to on-screen tobacco use was reported to influence uptake of tobacco use by students.

ROLE OF THE EDUCATIONAL INSTITUTIONS IN TOBACCO CONTROL

Apart from the legal obligations under the COTPA, the educational institutions could play an important role in raising awareness on tobacco-related issues among students. Furthermore, in order to implement the provisions of the COTPA that apply to educational institutions, it is desirable that educational institutions come out with explicit tobacco-free policies and establish clear mechanisms for monitoring and implementing these policies. Our study explored two important aspects of educational institutions' role towards tobacco control: (1) raising awareness on tobacco-related issues among students and (2) existence of institutional-level tobacco-free policies.

Tobacco-Free Policies at Educational Institutions

Students were asked to report whether there were any rules at their PUCs prohibiting tobacco use and imposing punishments on those who use tobacco on campuses. Only

28.9% students reported that there was a policy at their PUCs not allowing students to use tobacco and those who used tobacco were often punished. Surprisingly, 50.5% students did not know whether any such rules regarding tobacco use existed in their PUCs while 11.9% students said that they knew that no such rules existed at their PUCs. A small proportion of students (8.6%) reported that their PUCs had a policy preventing use of tobacco by students but hardly any student was punished under such policy:

> *Actually nowhere it is written or no one has told us, except science teachers sometimes. It is mainly out of the self-respect we don't use tobacco in PUCs.*

Findings of the GSPS India (2006) revealed that 64.6% of school personnel surveyed reported that their schools had policy for prohibiting smoking among students and 55.2% reported their schools had policy for prohibiting smoking among school personnel.[3]

Education About Tobacco Harms

Students were asked whether they were taught in any of the classes about harms of smoking or chewing tobacco during the year preceding the survey. Only 34.4% of students reported that they were taught about harms of tobacco use in the last one year, while the rest of the students said that they were either not taught (42%) or they were not sure (23.6%).

According to the GYTS India (2006), 54.6% of students were taught about dangers of smoking in the last year and only 37.2% students reported that reasons regarding tobacco use by people were discussed in their classes.[9] The GSPS India (2006) revealed that 34.3% of school personnel reported their school having non-classroom programmes to teach tobacco use prevention among students.[11] However, only 34.4% of school personnel had access to teaching and learning materials about tobacco control and only 16.3% of school personnel had received training to do so.[12]

STUDENTS' SUGGESTIONS FOR TOBACCO CONTROL

Students were asked to express their opinions on whether people should be allowed to smoke. This was an attempt to understand students' attitudes towards prevailing tobacco control rules. Majority of students (72.3% boys and 86.7% girls) opined that people should not be allowed to use tobacco as tobacco use harms their health. However, 17.5% of boys and 8% of girls opined that people should be allowed to use tobacco as long as they do not harm others (i.e. through passive smoking). A very few students (7.5% boys and 4.5% girls) were of the opinion that people should be allowed to use tobacco irrespective of the harm caused by tobacco use to themselves or to others.

Furthermore, students were asked an open-ended question of whether there is a need to work towards reducing tobacco use among youth and if yes, what do they think are the appropriate measures. Nearly one-third of the students (32.8%) felt no need to do anything to reduce tobacco use among youth, while 67.2% of students

Table 6.1 Students' suggestions for reducing tobacco use among youth.

Suggestions	Students (%)*
Supply-side measures	
No production of tobacco products/ban on tobacco products	35.0
Prohibition on sale of tobacco products (in general/ to minors)	19.3
Demand-side measures	
Raise awareness (through media, programmes, curriculum, etc.)	21.4
Regulation of use (through rules and fines/punishments to users)	18.9
Prohibition of tobacco advertisements/ on-screen tobacco use	3.0
Less pocket money to students/higher taxes on tobacco products	2.4
Teachers should not use tobacco/peer activism	2.4

*Total percentage may exceed that of 100% because of multiple responses.

provided their suggestions for reducing youth tobacco use. Table 6.1 provides details on students' suggestions to reduce tobacco use among youth. Students suggested both supply- and demand-side measures.

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11 Sinha et al., see Ref [3].
12 Sinha et al., see Ref [3].

Chapter Seven

Recommendations

This chapter, based on the evidence presented so far in the earlier chapters, provides some pertinent recommendations to reduce tobacco use among youth. It also specifically reflects on the role that educational institutions could play in this.

ROLE OF THE EDUCATIONAL INSTITUTIONS IN TOBACCO CONTROL

The prevalence of tobacco use among pre-university students is quite high and is generally higher compared to secondary school students in Karnataka. Entry in pre-university phase might be associated with higher tobacco use. Also, the median age of initiation of tobacco use (i.e. 15 years) coincides with the time when students are in 10th grade or just about to enter the pre-university phase. Hence, tobacco-related issues should be addressed early in school age and should be re-emphasized in secondary education and pre-university education through various means described in the following sections.

Raise Awareness About Tobacco-Related Harms

Though awareness among students about harmful effects of tobacco use appears relatively high, there is certainly a room for further improvement. Awareness on tobacco-related health harms appears to be the most important reason for students to refrain from initiating tobacco use. Education on harmful effects of tobacco use should be made a part of the curriculum at various levels from schools to pre-university colleges.

Addressing Issues Related to Substance Abuse

Association between the tobacco use and the alcohol use is evident through this study. Hence, educational efforts should focus on the substance abuse, in general, discussing issues related to tobacco, alcohol and other substances rather than having an isolated programme focusing only on tobacco.

Changing Attitudes and Perceptions

The tobacco use has prominent social and cultural connotations in students' perceptions of tobacco use and tobacco users. For some students, tobacco use generates a favourable appeal among their social networks. Gender forms important basis for acceptance and rejection of tobacco use by majority of students. Information/Education/Communication strategies used to raise awareness about tobacco-related issues among students should go beyond depicting the harm of tobacco use and should also address these prevalent attitudes and perceptions among youth towards tobacco use and tobacco users.

Involving Parents and Friends

Tobacco-free family and friends appear to have strong protective influence on students to refrain from the tobacco use. Hence, it is important for educational institutions to engage the parents and promote peer-led approaches towards reducing tobacco use among students.

Provision of Counselling Services

Provision of counselling services at educational institutions could help students to cope with various stressors (examinations, relationship issues, etc.) that seem to influence students to take up tobacco use. Such services could also help students to overcome their curiosity of tobacco products, peer influence and other issues and help them develop informed views/perceptions.

Tobacco-Free Policies

Students appear to be vulnerable in terms of their exposure to others (friends, school personnel, etc.) using tobacco within their surrounding environment. Having explicit policies preventing tobacco use by students and by school personnel at school premises and within school campuses is crucial in promoting tobacco-free environment at educational institutions.

STRENGTHENING THE IMPLEMENTATION OF TOBACCO CONTROL LEGISLATION

The findings from my study depicts the poor status of enforcement of the selected provisions of the Cigarette and Other Tobacco Products Act, 2003 (COTPA) that are especially relevant to youth. National government and state governments shall ensure the effective implementation of the following provisions of the COTPA in order to reduce tobacco use among youth.

Prohibition of the Sale of Tobacco to Minors and Near the Educational Institutions

Despite the legal prohibition on sale of tobacco products to minors and within 100 yards of educational institutions, tobacco shops/vendors remain the major source of direct purchase of tobacco products by minors. Such tobacco selling points exist near many educational institutions. An effective implementation of the section 6 of the COTPA 2003 could reduce the easy availability of tobacco products to students. Also, the prohibition on the sale of loose cigarettes/*bidis* would help to deter students, who cannot easily afford to purchase cigarettes/*bidis* packets. Recently, many state governments in India have banned manufacturing, sale, storage and distribution of *gutka*, in some states also other chewing tobacco products including *panmasala*, under the Food Safety and Standards Act 2006.[1] Considering that 31.7% of current tobacco users in our study reported using chewing tobacco and majority of these student tobacco users are able to purchase tobacco products directly from tobacco retailers, an effective implementation of ban on sale of *gutka* and other smokeless tobacco products would reduce ready availability of tobacco products to youth.

Prohibition of Smoking at Public Places

Section 4 of COTPA prohibits smoking at public places including at educational institutions. However, students remain exposed to people using tobacco at public places and to school personnel at educational institutions. Apart from influencing students to initiate tobacco use, such exposure would have harmful effects on students' health. Effective implementation of ban on smoking at public places would reduce vulnerability and health hazards for students.

Prohibition on Advertising of Tobacco Products

A significant proportion of students get exposed to tobacco advertisements/brand names in media despite having legal prohibition on such advertising. Also, of late, surrogate advertisements of tobacco products featuring non-tobacco products bearing same brand names and imagery is becoming common. Our study demonstrates that exposure to tobacco advertisements influences uptake of tobacco use by students. There is a need to strengthen the enforcement of the section 5 of the COTPA to prohibits such practices.

Reducing Exposure to on-Screen Tobacco Use

The evidence presented in this monograph clearly demonstrates that exposure to actors using tobacco in films or on television influences youngsters to take up tobacco use. Current guidelines regarding film certification by Central Film Certification Board, India mentions that scenes that tend to encourage, justify or glamorise consumption of tobacco or smoking shall not be shown in films. Effective compliance to such guidelines would reduce exposure of youngsters to on-screen tobacco use.

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